Claim Amendments

1-60. (canceled)

61. (new) A glass comprising:

a substantially alkali-free aluminoborosilicate glass;

said glass having the composition (in % by weight, based on oxide):

SiO_2	> 58 - 65
B_2O_3	> 6 - 11.5
Al_2O_3	> 14 - 25
MgO	4 - 8
CaO	0 - 8
SrO	2.6 - < 4
BaO	0 - < 0.5
with SrO + BaO	> 3
ZnO	0.5 - 2;

said composition of said SiO_2, said B_2O_3, said Al_2O_3, said MgO, said CaO, said SrO, said BaO, said SrO + BaO, and said ZnO being selected to provide all of (i.), (ii.), (iii.), and (iv.), wherein (i.), (ii.), (iii.), and (iv.) comprise:

(i.) a coefficient of thermal expansion $\alpha_{20/300}$ of between 2.8×10^{-6}/K and 3.8×10^{-6}/K;

(ii.) a glass transition temperature, T_g, of more than 713 degrees Celsius to maximize heat resistance of said glass;

(iii.) a temperature at a viscosity of 10^2 dPas of at most 1694 degrees Celsius; and

(iv.) a processing temperature, V_A, at a viscosity of 10^4 dPas of at most 1273 degrees Celsius.

62. (new) The glass according to Claim 61, wherein:

said glass contains from more than 8% by weight to 11.5% by weight of B_2O_3.

63. (new) The glass according to Claim 62, comprising all of (a.), (b.), (c.), (d.), (e.), (f.), and (g.), wherein (a.), (b.), (c.), (d.), (e.), (f.), and (g.) comprise:

(a.) one of (i.), (ii.), and (iii.):

(i.) more than 18% by weight of Al_2O3;

(ii.) at least 20.5% by weight of Al_2O3; and

(iii.) at least 21% by weight of Al_2O_3;

(b.) one of (i.) and (ii.):

(i.) a glass containing additionally (in % by weight):

ZrO_2	0 - 2
TiO_2	0 - 2
with $ZrO_2 + TiO_2$	0 - 2
As_2O_3	0 - 1.5
Sb_2O_3	0 - 1.5
SnO_2	0 - 1.5
CeO_2	0 - 1.5
Cl^-	0 - 1.5
F^-	0 - 1.5
SO_4^{2-}	0 - 1.5
with $As_2O_3 + Sb_2O_3 + SnO_2 + CeO_2$ $+ Cl^- + F^- + SO_4^{2-}$	0 - 1.5; and

(ii.) a glass minimized in ZrO_2, SnO_2, TiO_2, and CeO_2;

(c.) a glass in which arsenic oxide, antimony oxide, and inherent impurities are minimized;

(d.) said glass comprises a float glass;

(e.) a density, ρ, of < 2.600 g/cm^3;

(f.) all of (i.), (ii.), and (iii.):

(i.) said glass is resistant to thermal shock;

(ii.) said glass has a high transparency over a broad spectral range in the visible and ultra violet ranges; and

(iii.) glass is free of bubbles, knots, inclusions, streaks, and surface undulations; and

(g.) said glass comprises a glass substrate for a flat panel liquid-crystal display, such as, for a laptop computer, the flat panel liquid-display including a twisted nematic display, a supertwisted nematic display, an active matrix liquid-crystal display, a thin film transistor display, and a plasma addressed liquid-crystal display.

64. (new) A glass comprising:

a substantially alkali-free aluminoborosilicate glass;

said glass having a coefficient of thermal expansion $\alpha_{20/300}$ of between 2.8 x 10^{-6}/K and 3.8 x 10^{-6}/K;

said glass having the composition (in % by weight, based on oxide):

SiO_2	> 58 - 65
B_2O_3	> 6 - 11.5
Al_2O_3	> 14 - 25
MgO	4 - 8
CaO	0 - 8
SrO	2.6 - < 4
BaO	0 - < 0.5
with SrO + BaO	> 3
ZnO	0 - 2.

65. (new) The glass according to Claim 64, wherein:

said glass contains of from 0.5% by weight to 2% by weight of zinc oxide.

66. (new) The glass according to Claim 65, wherein:

said glass has a glass transition temperature, T_g, of more than 700 degrees Celsius to maximize heat resistance of said glass substrate.

67. (new) The glass according to Claim 66, wherein:

said glass has a temperature at a viscosity of 10^2 dPas of at most 1720 degrees Celsius.

68. (new) The glass according to Claim 67, wherein:

said glass has a processing temperature, V_A, at a viscosity of 10^4 dPas of at most 1350 degrees Celsius.

69. (new) The glass according to Claim 64, wherein:

said glass has a glass transition temperature, T_g, of more than 700 degrees Celsius to maximize heat resistance of said glass substrate.

70. (new) The glass according to Claim 69, wherein:

said glass has a temperature at a viscosity of 10^2 dPas of at most 1720 degrees Celsius.

71. (new) The glass according to Claim 70, wherein:

said glass has a processing temperature, V_A, at a viscosity of 10^4 dPas of at most 1350 degrees Celsius.

72. (new) The glass according to Claim 64, wherein:

said glass has a temperature at a viscosity of 10^2 dPas of at most 1720 degrees Celsius.

73. (new) The glass according to Claim 72, wherein:

said glass has a processing temperature, V_A, at a viscosity of 10^4 dPas of at most 1350 degrees Celsius.

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74. (new) The glass according to Claim 73, wherein:

said glass contains of from 0.5% by weight to 2% by weight of zinc oxide.

75. (new) The glass according to Claim 64, wherein:

said glass has a processing temperature, V_A, at a viscosity of 10^4 dPas of at most 1350 degrees Celsius.

76. (new) The glass according to Claim 75, wherein:

said glass contains of from 0.5% by weight to 2% by weight of zinc oxide.

77. (new) The glass according to Claim 64, comprising (i.), (ii.), (iii.), and (iv.), wherein (i.), (ii.), (iii.), and (iv.) comprise:

(i.) from 0.5% by weight to 2% by weight of zinc oxide;

(ii.) a glass transition temperature, T_g, of more than 713 degrees Celsius to maximize heat resistance of said glass substrate;

(iii.) a temperature at a viscosity of 10^2 dPas of at most 1694 degrees Celsius; and

(iv.) a processing temperature, V_A, at a viscosity of 10^4 dPas of at most 1273 degrees Celsius.

78. (new) The glass according to Claim 64, wherein:
said glass is minimized in ZrO_2, SnO_2, TiO_2, and CeO_2.

79. (new) The glass according to Claim 64, comprising all of (i.), (ii.), (iii.), (iv.), (v.), (vi.), (vii.), (viii.), (ix.), (x.), (xi.), and (xii.), wherein (i.), (ii.), (iii.), (iv.), (v.), (vi.), (vii.), (viii.), (ix.), (x.), (xi.), and (xii.) comprise:

(i.) one of (a.) and (b.):

(a.) a glass transition temperature, T_g, of more than 700 degrees Celsius to maximize heat resistance of said glass substrate; and

(b.) a glass transition temperature, T_g, of more than 713 degrees Celsius to maximize heat resistance of said glass substrate;

(ii.) one of (a.) and (b.):

(a.) a temperature at a viscosity of 10^2 dPas of at most 1694 degrees Celsius; and

(b.) a temperature at a viscosity of 10^2 dPas of at most 1720 degrees Celsius;

(iii.) one of (a.) and (b.):

(a.) a processing temperature, V_A, at a viscosity of 10^4 dPas of at most 1350 degrees Celsius; and

(b.) a processing temperature, V_A, at a viscosity of 10^4 dPas of at most 1273 degrees Celsius;

(iv.) of more than 8% by weight to 11.5% by weight of B_2O_3;

(v.) one of (a.), (b.), and (c.):

(a.) more than 18% by weight of Al_2O3;

(b.) at least 20.5% by weight of Al_2O3; and

(c.) at least 21% by weight of Al_2O_3;

(vi.) one of (a.) and (b.):

(a.) a glass containing additionally (in % by weight):

ZrO_2	0 - 2
TiO_2	0 - 2
with $ZrO_2 + TiO_2$	0 - 2
As_2O_3	0 - 1.5
Sb_2O_3	0 - 1.5
SnO_2	0 - 1.5
CeO_2	0 - 1.5
Cl^-	0 - 1.5
F^-	0 - 1.5
SO_4^{2-}	0 - 1.5
with $As_2O_3 + Sb_2O_3 + SnO_2 + CeO_2$ + $Cl^- + F^- + SO_4^{2-}$	0 - 1.5; and

(b.) a glass minimized in ZrO_2, SnO_2, TiO_2, and CeO_2;

(vii.) a glass in which arsenic oxide, antimony oxide, and inherent impurities are minimized;

(viii.) said glass comprises a float glass;

(ix.) a density, ρ, of < 2.600 g/cm^3;

(x.) all of (i.), (ii.), and (iii.):

(i.) said glass is resistant to thermal shock;

(ii.) said glass has a high transparency over a broad spectral range in the visible and ultra violet ranges; and

(iii.) glass is free of bubbles, knots, inclusions, streaks, and surface undulations;

(xi.) said glass comprises a glass substrate for a flat panel liquid-crystal display, such as, for a laptop computer, the flat panel liquid-display including a twisted nematic display, a supertwisted nematic display, an active matrix liquid-crystal display, a thin film

transistor display, and a plasma addressed liquid-crystal display; and

(xii.) a zinc oxide content of from 0.5% by weight to 2% by weight.

80. (new) The glass according to Claim 64, comprising at least one of (i.), (ii.), (iii.), (iv.), (v.), (vi.), (vii.), (viii.), (ix.), (x.), (xi.), and (xii.), wherein (i.), (ii.), (iii.), (iv.), (v.), (vi.), (vii.), (viii.), (ix.), (x.), (xi.), and (xii.) comprise:

(i.) one of (a.) and (b.):

(a.) a glass transition temperature, T_g, of more than 700 degrees Celsius to maximize heat resistance of said glass substrate; and

(b.) a glass transition temperature, T_g, of more than 713 degrees Celsius to maximize heat resistance of said glass substrate;

(ii.) one of (a.) and (b.):

(a.) a temperature at a viscosity of 10^2 dPas of at most 1694 degrees Celsius; and

(b.) a temperature at a viscosity of 10^2 dPas of at most 1720 degrees Celsius;

(iii.) one of (a.) and (b.):

(a.) a processing temperature, V_A, at a viscosity of 10^4 dPas of at most 1350 degrees Celsius; and

(b.) a processing temperature, V_A, at a viscosity of 10^4 dPas of at most 1273 degrees Celsius;

(iv.) of more than 8% by weight to 11.5% by weight of B_2O_3;

(v.) one of (a.), (b.), and (c.):

(a.) more than 18% by weight of Al_2O3;

(b.) at least 20.5% by weight of Al_2O3; and

(c.) at least 21% by weight of Al_2O_3;

(vi.) one of (a.) and (b.):

(a.) a glass containing additionally (in % by weight):

ZrO_2	0 - 2
TiO_2	0 - 2
with $ZrO_2 + TiO_2$	0 - 2
As_2O_3	0 - 1.5
Sb_2O_3	0 - 1.5
SnO_2	0 - 1.5
CeO_2	0 - 1.5
Cl^-	0 - 1.5
F^-	0 - 1.5
SO_4^{2-}	0 - 1.5
with $As_2O_3 + Sb_2O_3 + SnO_2 + CeO_2$ + $Cl^- + F^- + SO_4^{2-}$	0 - 1.5; and

(b.) a glass minimized in ZrO_2, SnO_2, TiO_2, and CeO_2;

(vii.) a glass in which arsenic oxide, antimony oxide, and inherent impurities are minimized;

(viii.) said glass comprises a float glass;

(ix.) a density, ρ, of < 2.600 g/cm^3;

(x.) all of (i.), (ii.), and (iii.):

(i.) said glass is resistant to thermal shock;

(ii.) said glass has a high transparency over a broad spectral range in the visible and ultra violet ranges; and

(iii.) glass is free of bubbles, knots, inclusions, streaks, and surface undulations;

(xi.) said glass comprises a glass substrate for a flat panel liquid-crystal display, such as, for a laptop computer, the flat panel liquid-display including a twisted nematic display, a supertwisted

nematic display, an active matrix liquid-crystal display, a thin film transistor display, and a plasma addressed liquid-crystal display; and

(xii.) a zinc oxide content of from 0.5% by weight to 2% by weight.